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| APPLICATION NO.                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------|-------------|----------------------|---------------------|------------------|
| 09/407,645                      | 09/28/1999  | BRUCE L. CARNEAL     | TACHYON.39A         | 3012             |
| 20995                           | 7590        | 10/07/2004           | EXAMINER            |                  |
| KNOBBE MARTENS OLSON & BEAR LLP |             |                      | HSU, ALPUS          |                  |
| 2040 MAIN STREET                |             |                      | ART UNIT            | PAPER NUMBER     |
| FOURTEENTH FLOOR                |             |                      |                     |                  |
| IRVINE, CA 92614                |             |                      | 2665                |                  |

DATE MAILED: 10/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |
|------------------------------|------------------------|---------------------|
|                              | 09/407,645             | CARNEAL ET AL.      |
| <b>Examiner</b>              | <b>Art Unit</b>        |                     |
|                              | Alpus H. Hsu           | 2665                |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 30 September 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1,5-47,56-59 and 63-69 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) 15-32,66,68 and 69 is/are allowed.

6)  Claim(s) 1,5-11,33,35-42,46,56-58,63-65 and 67 is/are rejected.

7)  Claim(s) 12-14,34,43-45,47 and 59 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_ .

5)  Notice of Informal Patent Application (PTO-152)

6)  Other: \_\_\_\_\_

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1. Applicant's arguments, see response, filed 08 March 2004, with respect to the rejection(s) of claim(s) 1, 5-47, 56-59, 63-69 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of PERREAULT et al. in US Patent No. 5,608,727 (newly cited).

2. In the specification, page 5, lines 10-12, page 6, lines 10-13, 18-21, page 17, lines 5-7, the applicant is requested to provide the information regarding the serial no., title, inventor, filing date and update the status from time to time for the listed related co-pending applications.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 5-11, 33, 35-42, 46, 56-58, 63-65 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over PERREAULT et al. in US Patent No. 5,608,727 (newly cited).

Regarding claim 1, PERREAULT et al. discloses a method of assigning at least a portion of the RF spectrum among at least one of a plurality of RF transmitters and receivers, comprising: monitoring a communication parameter that relates to performance of a group within the plurality of RF transmitters and receivers (col. 2, lines 53-67); determining, in response to the monitored communication parameter, a state of performance of the group (col. 3, lines 51-63); and allocating at least a portion of the RF spectrum from the a group to at least one other of the plurality of the transmitters and receivers (col. 4, line 60 to col. 5, line 34). PERREAULT et al. differs from the claim, in that, PERREAULT et al. does not disclose the allocation of portion of the RF spectrum is selected from the group having the best state of the performance. However, PERREAULT et al. does indicate that the spectrum manager is capable of optimizing the allocation of available spectrum of varying quality on a shared medium to multiple applications with multiple users to maintain the application user's requirement (col. 6, lines 3-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to select the group with the best state of the performance to be reallocated portion of the RF spectrum for sharing the bandwidth with other communication devices in the system to optimize the spectrum allocation to improve the system efficiency.

Regarding claim 5, PERREAULT et al. discloses the assignment of data rate (col. 5, lines 29-31).

Regarding claim 6, PERREAULT et al. discloses the determination of the size of the portion to be assigned away (col. 5, lines 15-23).

Regarding claim 7, PERREAULT et al. discloses the determination of the demand of the group (col. 4, lines 1-6).

Regarding claim 8, PERREAULT et al. discloses the adjustment of the demand based on quality of services (col. 4, lines 27-40).

Regarding claim 9, PERREAULT et al. discloses the monitoring the aggregate demand of the group (col. 4, lines 1-6).

Regarding claim 10, PERREAULT et al. discloses the monitoring of the RF channel performance (col. 4, lines 46-54).

Regarding claim 11, PERREAULT et al. discloses the measurement of at least one of SNR and BER of the channel (col. 3, lines 56-57).

Regarding claims 33, 39 and 67, PERREAULT et al. discloses a system for allocating at least a portion of the RF spectrum from a receiver (102) among a plurality of RF transmitters (104s) by monitoring demand of a group within the plurality of RF transmitters (col. 4, lines 1-6); and reallocating at least a portion of the RF spectrum from the group to at least one other of the plurality of the transmitters (col. 4, line 60 to col. 5, line 34). PERREAULT et al. differs from the claim, in that, PERREAULT et al. does not disclose the allocation of portion of the RF spectrum is selected from the group having the smallest demand. However, PERREAULT et al. does indicate that the spectrum manager is capable of optimizing the allocation of available spectrum of varying quality on a shared medium to multiple applications with multiple users to maintain the application user's requirement (col. 6, lines 3-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to select the group with the smallest demand to be reallocated portion of the RF spectrum for sharing the bandwidth with other communication devices in the system to optimize the spectrum allocation to improve the system efficiency.

Regarding claims 35 and 37, PERREAUET et al. discloses the receiver obtain the demand and determine the aggregate demand of the group (col. 4, lines 1-6).

Regarding claim 36, PERREAUET et al. discloses the receiver adjust the demand based on quality of service (col. 4, lines 27-40).

Regarding claim 38, PERREAUET et al. discloses the receiver grants at least a portion of the demand to each transmitter (col. 6, lines 18-24).

Regarding claim 40, PERREAUET et al. discloses the receiver monitors RF channel performance (col. 4, lines 46-54).

Regarding claim 41, PERREAUET et al. discloses the receiver measures at least one of SNR and BER of the channel (col. 3, lines 56-57).

Regarding claim 42, PERREAUET et al. discloses the receiver assigns data rate (col. 5, lines 29-31).

Regarding claim 42, PERREAUET et al. discloses the receiver reallocates the portion of the RF spectrum to one other group having a demand greater than the smallest demand (col. 4, lines 8-17).

Regarding claims 56 and 63, PERREAUET et al. discloses a communication system and a communication system programmed with instructions that when executed by a processor perform a method of assigning at least a portion of the RF spectrum among at least one of a plurality of RF transmitters and receivers, comprising: monitoring a communication parameter that relates to performance of a group within the plurality of RF transmitters and receivers (col. 2, lines 53-67); determining, in response to the monitored communication parameter, a state of performance of the group (col. 3, lines 51-63); and allocating at least a portion of the RF

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spectrum from the a group to at least one other of the plurality of the transmitters and receivers (col. 4, line 60 to col. 5, line 34). PERREAULT et al. differs from the claim, in that, PERREAULT et al. does not disclose the allocation of portion of the RF spectrum is selected from the group having the best state of the performance. However, PERREAULT et al. does indicate that the spectrum manager is capable of optimizing the allocation of available spectrum of varying quality on a shared medium to multiple applications with multiple users to maintain the application user's requirement (col. 6, lines 3-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to select the group with the best state of the performance to be reallocated portion of the RF spectrum for sharing the bandwidth with other communication devices in the system to optimize the spectrum allocation to improve the system efficiency.

Regarding claims 57 and 64, PERREAULT et al. discloses the determination of the demand of the group (col. 4, lines 1-6).

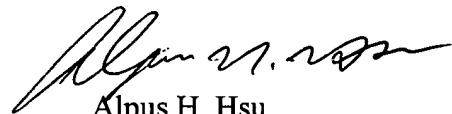
Regarding claims 58 and 65, PERREAULT et al. discloses the adjustment of the demand based on quality of services (col. 4, lines 27-40).

6. Claims 15-32, 66, 68 and 69 are allowed.
7. Claims 12-14, 34, 42-45, 47, 59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alpus H. Hsu whose telephone number is (571)272-3146. The examiner can normally be reached on M-F (5:30-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHH



Alpus H. Hsu  
Primary Examiner  
Art Unit 2665